

Department of Conservation and Recreation
Quabbin Interpretive Services
Educational Information Packet



Points of Interest in Quabbin Park

Quabbin Park offers the widest range of features and educational opportunities for school groups. History, biology, chemistry and engineering are just a few of the topics that can be addressed from this location. Here is a description of some of the main stops at the Park, but there are numerous other trails and vistas, a few of which will be listed at the end and for which more information is available.

Visitor Center:

The Visitor Center is located in the Administration Building which was built in the 1930's. The building was originally intended to be administrative offices and living quarters for Metropolitan District Commission (MDC, the predecessors to the DCR) employees, as well as MDC police (there is still a jail cell in the basement!). In the 1980's through the early 2000's, a series of divisions in the MDC established the Department of Conservation and Recreation, the Massachusetts Water Resource Authority and the Massachusetts State Police, all of which are still here. Today the building houses not only the administration for the Quabbin Reservoir and Watershed, but also engineers, biologists, and many other people whose jobs are vital to the mission of the Quabbin.

Exhibits, videos and other resources are located in the Visitor Center. Its hours are:

- **Monday through Friday 8:30 – 4:30 year round**
- **Saturday & Sunday 8:30 – 4:30 November through February**
- **Saturday & Sunday 9:00 – 5:00 March through October.**

Winsor Dam:

Winsor Dam was named for Frank E. Winsor, the chief engineer of the project. It was constructed from 1935 - 1939, and was a marvel of engineering at the time. It is 2,640 feet across and used 4 million cubic yards of hydraulic fill to build. A concrete caisson wall was constructed to support the dam and reaches down to the bedrock at a maximum depth of 120'. The dam is also designed to release a minimum of 20 million gallons per day (required by law) to maintain the Swift River through a bypass system. The amazing process by which this structure was built was completely documented and photographed, and can be found at the Visitor Center.

“Y” Pool:

The “Y” Pool is the point at which the water from Winsor Dam meets the water from the Spillway and merges into the Swift River. The water, which is drawn from the bottom of the reservoir, runs incredibly clear, and is worth the walk just to see it. The temperature here remains an average of 60 degrees, which is an ideal temperature for the various types of trout. Catch and release fly fishing can be done here year round.

Spillway:

Another amazing piece of engineering is the Spillway. This area is designed so that, when the water in the reservoir reaches a certain height, it will spill over the side and down through a man made “stream” creating a beautiful waterfall, then connects to the Swift River at the “Y” Junction. There are three 8” stop logs that can be placed across the top of the spillway to control the amount of water that is released.

Winsor Memorial:

Frank E. Winsor, the chief engineer of the Quabbin project, died suddenly in 1939, before the completion of the reservoir. He never got to see his work finished. This memorial, which was dedicated in 1941, is set in a lovely spot, surrounded by trees and overlooking the water. In the distance, you can see the Administration Building and the dam which bears Winsor's name.

Quabbin Tower:

Quabbin Tower was built in 1940-1941. It is 65 feet tall with a glass top that allows complete views in all 4 directions. It was originally built as both a fire tower, to help control forest fires, and an observation tower for visitors. On a clear day you can see as far as Mt. Monadnock in NH, Mt. Greylock, the Holyoke Range and even the skyscrapers in Springfield and Hartford.

Adjacent to the Tower is a small trailer. This is the Air Monitoring Station that is run by the Dept. of Environmental Protection (DEP). These stations are located around Massachusetts with the specific purpose of monitoring ambient air quality. This monitoring is critical in detecting pollutants such as ozone, carbon monoxide and nitrogen dioxide (among others) that adversely affect the air we breathe. Field trips that come here learn an amazing yet often unseen part of the work that is done to ensure our health and safety, and will learn real life applications of chemistry and environmental sciences. A visit to the Air Monitoring Station is by appointment only, through the DEP. Please contact: **Mark DuComb, DEP (978) 479-4511.**

Quabbin Tower is the only location in the park other than the Visitor Center that has indoor restrooms, which are open from **April** through **November**. There is a large parking lot here with picnic tables, so it is a good spot for lunches.

Enfield Lookout:

By far the most magnificent spot in the Park, the Enfield Lookout gives a panoramic overview of the entire reservoir. A plaque shows the view from this spot in 1927, when Enfield was still a thriving community, and again in 1939, when the valley had been cleared and was totally desolate, before the water started flowing in. This is an ideal location for bird watching, especially in the winter when there is a great chance of seeing a bald eagle soaring over the water!

Hanks Picnic Area:

This area is open from April through November. It is a lovely area with large fields, parking and picnic tables, as well as portable toilets, so it is another good place to stop for lunches. All trash at the Quabbin is "Carry in – Carry out", so there are no trash receptacles. The road from the picnic area leads right down to the waters edge, and is one of the only places in the Park that gets so close.

Webster Road:

Webster Road is one of the original roads from the town of Enfield. This road is easily accessible to foot traffic, and is fairly level. Students will see foundations, cellar holes and fields from homesteads long gone. Before they were destroyed, every building in the Quabbin Reservation was photographed and its location was recorded. This information is kept in the Administration Building, and interested groups can see pictures of the former homesteads that they will pass by on this trail. The road travels through different habitats on its roughly 1.5 mile path, so in addition to passing through history, students can observe the nature and wildlife of forest, field and stone all in one trip.

Gate 52:

A seemingly insignificant trailhead leads down to an area of historic interest. During WWII, parts of the Quabbin were used by the military. The Quabbin Reservation had been created and was off limits to the public, but the water had only just started filling in, so much of the land was still exposed. The U.S. Air Force would use the valley floor for target practice with dummy bombs (often filled with flour). The end of the road from Gate 52 was used as a practice shooting range. Concrete structures were built here to store the ammunition, and there was also a helicopter landing pad. The remains of these structures can still be seen.

Goodnough Dike and Trail:

The Goodnough Dike was named after Xanthus Henry Goodnough, who was an engineer for the State Board of Health through the early 1900's, and was a key person in the creation of the Quabbin Reservoir. It was built at the same time and in the same way as the Winsor Dam, except for the outlet into the Swift River and the Spillway (both features of the dam). The difference between a dam and a dike is that a dam holds back a flowing body of water (river or stream) and releases water by a spillway or discharge pipe, whereas a dike is simply a wall holding water in. On the upper road of the dike is a short, easy trail showing different stages of forest management and habitats. It is a nice walk and a good, quiet place to observe wildlife.

Quabbin Park Cemetery:

As part of the clearing of the Swift River Valley, 7,613 graves had to be removed from 34 cemeteries. A new, beautifully landscaped cemetery was built for these bodies to be moved to in 1931 - 1932. The families of the deceased had the option of having the bodies moved to any cemetery of their choice, but once they saw how lovely this new one was, and how much care was being taken of the plots, most people decided to have their loved ones moved here. A total of 6,601 bodies were placed here as their final resting place. Great care and consideration was taken in the process and families were allowed to pick the location of their new plots. This meant that formal cemetery groups were not kept together, so the layout of the bodies seems haphazard, leaving most people today to assume that the bodies were moved thoughtlessly. Stones from the foundations of each of the churches in the valley were used to build the grand columns that flank the entry way to the cemetery, and important monuments from the towns were relocated here as well.

Other popular spots include the Belchertown Lookout, the Rotary Vista Trail and a trail along the water's edge from Hank's Picnic Area.

Suggestions to Tie-in to Frameworks Standards by Grade

(This is not an all-inclusive list, merely a starting point to encourage teachers to think of the many facets of Quabbin Reservoir and the educational opportunities available here.)

Pre-K – 2:

Science

ESS1 – Recognize that water, rocks, soil and living organisms are found on the earth's surface. *All these things can be observed at Quabbin Park.*

LS3 – Recognize that plants and animals have life cycles, and that life cycles vary for different living things. *Students can see different stages of tree growth.*

LS8 – Identify the ways in which an organism's habitat provided for its basic needs. *Many different habitats at Quabbin provide for different life forms.*

Grades 3 – 5:

Science

ESS6 – Explain how air temperature, moisture, wind speed and direction, and precipitation make up the weather in a particular place and time. *Find out how these factors affect the pollutants in the air and how weather influences air quality.*

ESS10 – Describe how water on earth cycles in different forms and in different locations, including underground and in the atmosphere. *Study Quabbin watershed.*

ESS12 – Give examples of how the surface of the earth changes due to slow processes such as erosion and weathering, and rapid processes such as landslides, earthquakes, and volcanic eruptions. *Discuss the dangers of erosion to the Quabbin Watershed and how that would affect water quality and the environment. Find out what measures were taken to avoid these concerns.*

LS6 – Give examples of how inherited characteristics may change over time as adaptations to changes in the environment that enable organisms to survive eg. shape of beak or feet, placement of eyes etc... [Compare and contrast the physical characteristics of plants or animals from widely different environments]. *Different environments at Quabbin provide for good observation of this.*

LS7 – Give examples of how changes in the environment have caused some plants and animals to die or move to new locations. *Discuss invasive species of plants here, change from farmland to lake & forest, changes brought by forestry/reclaimed fields, deer population, bald eagle, loons and etc.*

LS10 – Give examples of how organisms can cause change in their environment to ensure survival. Explain how some of these changes may affect the ecosystem. [Research local projects where humans are changing the environment to ensure a species survival.]. *Discuss the change humans made at Quabbin and the reasons for it; discuss forestry, reclaimed fields, conservation, wildlife management, bald eagles, reasons for restrictions on use.*

Technology and Engineering – The construction of the reservoir including the building of the dam and dike provide ample opportunity for studies in technology and engineering from the very simple to the very complex depending on classes level of interest and ability.

History

H3.12 – Explain how objects or artifacts of everyday life in the past tell us how ordinary people lived and how everyday life has changed. Draw on the services of the local historical society and local museums as needed. *Quabbin provides much information about the people of the valley and what their lives were like.*

H4.11 – Describe the climate, major physical features and major natural resources in each region. *Quabbin is both a major physical feature of the region and a provider of natural resources.*

H5.21 – Describe Shay's Rebellion of 1786-1787 and explain why it was one of the crucial events leading to the Constitutional Convention. *Shays Rebellion originated in Prescott, one of the 4 towns taken for the reservoir.*

Grades 6 – 8

Science

LS13 – Give examples of ways in which organisms interact and have different functions within an ecosystem that enable the ecosystem to thrive. *Study the ecosystems of the Quabbin and understand reason for wildlife and habitat management.*

LS17 – Identify ways in which ecosystems have changed throughout geologic time in response to physical conditions, interactions among organisms and the actions of humans. Describe how changes may be catastrophic such as volcanic eruptions or ice storms. *Study the geologic factors of the Swift River Valley and how they*

contributed to the creation of the reservoir; study the impact of human intervention on the ecosystems that have developed since that time.

PS5 – Recognize that there are more than 100 elements that combine in a multitude of ways to produce compounds that make up all of the living and nonliving things that we encounter. *Discover what elements make up the air we breathe; what elements or compounds are considered helpful or harmful, where those elements might be encountered and how they get into the atmosphere. Find out how these elements affect our bodies, the environment and other species.*

Technology and Engineering – The construction of the Quabbin Reservoir and watershed system including the building of the dam and dike provide ample opportunity for studies in technology and engineering from the very simple to the very complex depending on each classes level of interest and ability.

High School

Science

ESS3.4 – Explain how water flows into and through a watershed. Explain the roles of aquifers, wells, porosity, permeability, water table and runoff. *Study the Quabbin Watershed, reason for size, trees, purity control/regulations of, spillway for overflow and etc.*

ESS3.5 – Describe the process of the hydrologic cycle, including evaporation, condensation, precipitation, surface runoff and groundwater percolation, infiltration and transpiration. *Study the Quabbin Watershed and the affect the hydrologic cycle has on it.*

BS1.1 – Recognize that biological organisms are composed primarily of very few elements. The six most common are C,H,N,O,P and S. *Discover how these elements combine to provide an atmosphere that sustains life on this planet and how variations in these few elements can result in dramatic changes (e.g. O, O₂, O₃). Scientists at the Quabbin study these elements daily in air quality and in water quality.*

BS2.3 – Use cellular evidence and modes of nutrition to describe the six kingdoms. *The varying habitats of the Quabbin support species from all kingdoms.*

BS5 Evolution and Biodiversity & BS6 Ecology – The full range of these standards can be taught & observed at Quabbin. Teachers are encouraged to explore all the possibilities of bringing students to Quabbin for these lessons.

CS4.5 – Identify how hydrogen bonding in water affects a variety of physical, chemical and biological phenomena (e.g. surface tension, capillary action, density, boiling point. *Discover how these factors affect water quality and habitat at the Quabbin and how they are monitored.*

CS6.3 – Using the kinetic molecular theory, describe and contrast the properties of gases, liquids and solids. Explain, at the molecular level, the behavior of matter as it undergoes phase transitions. *Find out how the chemicals used in everyday items like household cleaners and gasoline enter the atmosphere in the gaseous state.*

PS3.2 – Explain how heat energy will move from a higher temperature to a lower temperature until equilibrium is reached. *Study how heat from surface of water at certain times of the year affects the other zones in the water which in turn affects plant and animal life, movement & growth.*

Technology and Engineering – The construction of the reservoir including the building of the dam and dike provide ample opportunity for studies in technology and engineering from the very simple to the very complex depending on classes level of interest and ability.

History

USI.18 – Explain the major components of local government in Massachusetts, including the roles and functions of school committees, town meetings, board of selectmen, mayors and city councilors. *Discover what happened to the local governments of the 4 towns that were taken for the Quabbin.*

USI.19 – Explain the rights and responsibilities of citizenship and describe how a democracy provides opportunities for citizens to participate in the political process through elections, political parties and interest groups. *Discuss what voice or level of participation that the citizens of the 4 towns in the Swift River Valley had during the entire process, from conception of the idea to put a reservoir there through the taking of the lands and eviction of the people.*

Explore local connections to the **Civil War** in the persons of Gen. Joseph Hooker, Gen. George B. McClellan and Dr. Mary Walker, each of whom had direct ties to the valley.

USII.2 – Explain the important consequences of the Industrial Revolution. *Study how the results of the Industrial Revolution in Boston contributed to the need to build the Quabbin Reservoir.*

USII.9 – Analyze the post-Civil War struggles of African Americans and women to gain basic civil rights. *Study Dr. Mary Walker, Greenwich resident, surgeon and women’s rights activist.*

USII.13 – Explain how the Great Depression and the New Deal affected American society. *This was the time at which residents of the valley have to start moving out and starting new life; explore their challenges and what the government did or did not do to help the people it was evicting; discuss how such a massive construction and relocation project would have been funded at this time.*

USII.17 – Explain important domestic events that took place during the war. *See where target practice for guns and bombs was done at Quabbin.*

Explore the **economic** factors surrounding the Quabbin project including cost of water supply to metropolitan area, relocation, construction, lawsuits, surveys and etc.

Explore the various issues of **government**, civil rights, and eminent domain as related to the creation of the Quabbin Reservoir.